

CLAIMS

1. Rear vision device (1, 100) for a motor vehicle, comprising

- a video camera (2) intended to be integrated fixedly at the rear of a motor vehicle,
- a flap (10, 110) mounted so as to be able to move between a closed position and an open position in which the said flap (10, 110) is disposed respectively in front of and away from the lens of the video camera (2), and
- drive means (20, 120) able to drive the flap (10, 110) in movement between the closed position and the open position,

15 the flap comprising pivoting means (13a, 13b) defining a pivot axis and allowing passage from one position to another,

characterised in that the flap also comprises

- a curved part (11); and
- articulation arms (12a, 12b),

20 the articulation arms being fixed to the curved part (11) and the pivoting means (13a, 13b).

25 2. Rear vision device (1, 100) according to claim 1, characterised in that the pivot axis is coaxial with respect to the axis corresponding to the curvature of the concave face (15) of the curved part (11).

30 3. Rear vision device (1, 100) according to claim 1 or 2, characterised in that the flap (10, 110) also comprises a means (17) of transmitting a movement

generated by the drive means (20), the transmission means being fixed to the flap (10, 110).

4. Rear vision device (1, 100) according to the
5 preceding claim, characterised in that the transmission
means (17) is provided on one of the articulation arms
(12a, 12b).

10 5. Rear vision device (1, 100) according to claim
3 or 4, characterised in that the transmission means
(17) is made in one piece with the flap (10, 110).

15 6. Rear vision device (1, 100) according to any
one of the preceding claims, characterised in that it
comprises elastic return means (22, 25a, 25b) able to
drive the flap (10, 110) in movement from the open
position to the closed position.

20 7. Rear vision device (1, 100) according to the
preceding claim, characterised in that the flap (10,
110) comprises a stop (26b) fixed to the flap (10),
cooperating by locking contact with the elastic return
means (25b).

25 8. Rear vision device (1, 100) according to the
preceding claim, characterised in that the stop (26b)
is made in one piece with the flap (10, 110).

30 9. Rear vision device (1, 100) according to any
one of the preceding claims, characterised in that the

drive means (20, 120) are able to immobilise the flap (10, 110) in at least one intermediate position between the closed position and the open position.

5 10. Rear vision device (1, 100) according to one of claims 1 to 9, characterised in that the drive means (20, 120) comprise:

10 - an electric motor (21) which is able to drive the flap (10, 110) in movement from the closed position to the open position,

 - elastic return means (22) able to drive the flap (10, 110) in movement from the open position to the closed position,

15 - and stop means (23, 24) able to stop the movement of the flap (10, 110) in the open position and in the closed position.

20 11. Rear vision device (1, 100) according to one of claims 1 to 9, characterised in that the drive means (20, 120) comprise an electric motor of the stepping type which is able on the one hand to drive the flap (10, 110) in movement between the closed position and the open position and on the other hand to stop the movement of the said flap (10, 110) in the open position and in the closed position.

25 12. Rear vision device (1, 100) according to any one of claims 1 to 10, characterised in that the flap (10, 110) is able to be driven manually in movement between the closed position and a storage position

situated beyond the open position, and in that the said rear vision device (1, 100) comprises locking means (40) able to immobilise the flap (10, 110) in the storage position.

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13. Rear vision device (1, 100) according to any one of claims 1 to 11, characterised in that it comprises locking means (50) which are able to lock the flap (10, 110) in the closed position in the absence of 10 use of the drive means (20, 120).

14. Rear vision device (1, 100) according to any one of claims 1 to 13, characterised in that the flap (10, 110) is mounted so as to be able to move through a 15 slot (6, 106) provided in a support (4, 104), and in that the said rear vision device (1, 100) comprises sealing means (60) able to seal the space between the flap (10, 110) and the support (4, 104).

20 15. Rear vision device (1, 100) according to claim 14, characterised in that the sealing means (60) comprise a first seal (61) at the distal end (18) of the flap (10, 110) which is able to seal the space between the flap (10, 110) and the support (4, 104) 25 when the said flap (10, 110) is in the open position, and a second seal (62) at the proximal end (16) of the flap (10, 110) which is able to seal the space between the flap (10, 110) and the support (4, 104) when the said flap (10, 110) is in the closed position.

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16. Rear vision device (1, 100) according to one
of claims 14 or 15, characterised in that the sealing
means (60) comprise a third seal which is fixed to the
support (4, 104), which is positioned at the stop (6,
5 106) and which is able to cooperate by sliding contact
with the flap (10, 110).

17. Rear vision device (1, 100) according to any
one of claims 1 to 16, characterised in that it
10 comprises cleaning means (30, 130) able to wipe the
external lens of the video camera (2) during the
movement of the flap (10, 110) between the closed
position and the open position.

15 18. Rear vision device (1, 100) according to any
one of claims 1 to 16, characterised in that it
comprises on the one hand a transparent screen (3, 103)
able to protect the lens of the video camera (2) and on
the other hand cleaning means (30, 130) able to wipe
20 the said protective screen (3, 103) when the flap (10,
110) moves between the closed position and the open
position.

19. Rear vision device (1, 100) according to
25 claim 18, characterised in that the external surface of
the protective screen (3, 103) is substantially
parallel to the movement path of the flap (10, 110),
and in that the cleaning means (30, 130) comprise a
scraper seal (31) which is fixed to the distal end (18)
30 of the flap (10, 110) and which is able to cooperate by

sliding contact with the said external surface of the protective screen (3, 103).

20. Rear vision device (1, 100) according to one
5 of claims 18 or 19, characterised in that the external
surface of the protective screen (3, 103) is
substantially parallel to the movement path of the flap
(10, 110) and in that the cleaning means (30, 130)
consist of a projecting part (32) of the distal seal
10 (61) of the flap (10, 110), a projecting part (32)
which is able to cooperate with by sliding contact with
the said external surface of the protective screen (3,
103).

15 21. Rear vision device (1, 100) according to any
one of claims 1 to 20, characterised in that the flap
(10) is mounted so as to be able to move with respect
to a support (4) on which the video camera (2) is
mounted fixedly.

20 22. Rear vision device (1, 100) according to any
one of claims 1 to 20, characterised in that the flap
(110) is mounted so as to be able to move with respect
to a protective cover (170) for the drive means (120).

25 23. Rear vision device (1, 100) according to any
one of claims 1 to 22, characterised in that the flap
(10, 110) is produced from transparent material.

24. Rear vision device (1, 100) according to
claim 23, characterised in that the flap (10, 110)
comprises prismatic means able to modify the field of
vision of the video camera (2) according to the
5 relative position of the said flap (10, 110) with
respect to the lens of the said video camera (2).

25. Motor vehicle, characterised in that it
comprises at least one rear vision device (1, 100)
10 according to any one of the preceding claims.